

A large Canadian energy producer faced frequent switching valve failures in their coking operation that led to premature shutdowns. After additional valve fixes failed to deliver extended operational intervals, they turned to MOGAS.

## Challenge

The client's goal was to extend the operational period between shutdowns to two years minimum. A competitor's valve had consistently failed to last more than one year of service before a shutdown was required. The primary problem was coke buildup inside the valve body, which led to leaks and/or valve lockups. Injecting fluid (hazardous) into the purging system proved to be only marginally successful.

## Solution

Discussions with MOGAS reassured the client that the existing valve's problems were understood and that the MOGAS DV-4 valve was designed to overcome those challenges. Innovative design features such as optimized advanced Computational Fluid Dynamics enhanced purging system efficiencies, making it unnecessary to use a purge drain while still maintaining optimal performance.

Prior to installation MOGAS ensured the actuator was correctly configured and fully operational. During operation the torque readings were initially slightly higher than the previous valve but remained stable. The customer reported the actuator was using 50 to 60% of its output torque during the valve's one year campaign.



The bonnet and end connects showed remarkably small amounts of coke build-up.



Down stream side of ball after being removed in the MOGAS service shop.

## Results

A planned shutdown took place after one year and the MOGAS DV-4 valve was disassembled for internal inspection. There was no coke buildup inside the valve body. The valve's performance did not result in any unexpected shutdowns and it withstood unit upsets that would have otherwise damaged the competitor's valve. The valve's bonnet design and nonuse of bellows effectively prevented coke from accumulating on the ball—a critical factor in the previous setup—even without the use of a purge drain. The absence of coke buildup was a welcoming outcome for the client, further demonstrating the valve's exceptional performance.

## Conditions

<b>Service:</b>	Oil Sands Delayed Coker
<b>Media:</b>	DCU Feedstock
<b>Operating Temperature:</b>	950° F (510° C)
<b>Pressure:</b>	95 psi (6.55 bar)

## Valve Specifications

<b>Size:</b>	16 inch
<b>Class:</b>	ASME 600
<b>Model:</b>	DV-4
<b>Construction:</b>	9 Cr – 1 Mo Body 13 Cr Ball



*Our driving mantra is reliability, removing unplanned shutdowns, and lengthening the time between turnarounds. And the DV-4 has met this challenge.*

*Site Instrumentation Engineer*